

## WHAT IS CLAIMED IS:

1           1.     A magnetic head prepared by a process comprising:  
 2           dispensing lapping media onto an interface surface of a compliant pad;  
 3           engaging the interface surface to the surface of a head outside a region  
 4           comprising a magnetic transducer defining a head gap; and  
 5           moving the pad over the head in a direction parallel to the head gap while  
 6           using a head rail to guide the pad.

1           2.     The magnetic head of claim 1 wherein the moving further comprises  
 2           oscillating the pad linearly over the head parallel to the head gap.

1           3.     The magnetic head of claim 1 wherein the lapping media contains a  
 2           combination of chemical and mechanical agents.

1           4.     The magnetic head of claim 3 wherein the chemical agents are  
 2           etchants that are specifically adjusted to give a desired head profile for the poletips  
 3           and shields.

1           5.     The magnetic head of claim 4 wherein the etchants are formed by  
 2           adding dilute acid to the conventional lapping media used at the interface surface.

1           6.     The magnetic head of claim 5 wherein the added etchants selectively  
 2           remove iron containing poles and shields to advance the poletips below a  
 3           surrounding insulator layer.

1           7.     The magnetic head of claim 3 wherein the magnetic head comprises  
2     an MR element and shields defining an MR read sensor, and wherein the moving of  
3     the compliant pad causes the mechanical and chemical agents to eliminate element  
4     conducting connections smears between the MR element and shields.

1           8.     The magnetic head of claim 1 wherein the compliant pad is relatively  
2     soft conforms to the head rail which serves as a guide resulting in parallel  
3     movement during the lapping.

1           9.     The magnetic head of claim 1 wherein the soft, compliant pad  
2     comprises a fabric mat.

1           10.    A method for performing a finishing lapping process to a magnetic  
2     head, comprising:  
3         dispensing lapping media onto an interface surface of a compliant pad;  
4         engaging the interface surface to the surface of a head outside a region  
5     comprising magnetic transducers defining a head gap; and  
6         moving the pad over the head in a direction parallel to the head gap while  
7     using a head rail to guide the pad.

1           11.    The method of claim 10 wherein the moving further comprises  
2     oscillating the pad linearly over the head parallel to the head gap.

1           12.    The method of claim 10 wherein the lapping media contains a  
2     combination of chemical and mechanical agents.

13. The method of claim 12 wherein the chemical etchants are etchants specifically adjusted to give a desired head profile for the poletips and shields.

14. The method of claim 13 wherein the etchants are formed by adding dilute acid to the conventional lapping media used at the interface surface.

15. The method of claim 14 wherein the added etchant selectively removes iron containing poles and shields to advance the poletips below a surrounding insulator layer.

16. The method of claim 12 wherein the magnetic head comprises a MR element and shields defining a MR read sensor, and wherein the moving of the soft, compliant pad causes the mechanical agents to eliminate element conducting connections and smears between the MR element and shields.

17. The method of claim 16 wherein the moving further comprises moving the pad from one end of the head to another and reversing the direction without stopping on the elements.

18. The method of claim 10 wherein the soft, compliant pad conforms to the head rail to provide a parallel movement during the moving.

19. The method of claim 10 wherein the soft, compliant pad comprises a fabric mat.

- 1           20.   The method of claim 10 wherein the fabric mat comprises a cotton  
2   mat.